

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)



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Applicant's or agent's file reference P61070PC00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NL 03/00401	International filing date (day/month/year) 28.05.2003	Priority date (day/month/year) 28.05.2003
International Patent Classification (IPC) or both national classification and IPC D01F8/06		
Applicant LANKHORST INDUTECH B.V. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
<input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of 2 sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 18.11.2004	Date of completion of this report 22.07.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Barker, S Telephone No. +49 89 2399-8526 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/NL 03/00401**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-8 as originally filed

Claims, Numbers

1-14 filed with telefax on 27.04.2005

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	2-14
	No: Claims	1
Inventive step (IS)	Yes: Claims	6-12,
	No: Claims	1-5,13,14
Industrial applicability (IA)	Yes: Claims	1-14
	No: Claims	

2. Citations and explanations

see separate sheet

Re. part V

- 1). The amendments in the claims are considered to comply with Art.34(2)(b) PCT.
- 2). The International Search Report cites the following document:
 - D1: EP-A-0 776 762 (LANKHORST INDUTECH BV) 4 June 1997 (1997-06-04)
 - D2: EP-A-1 277 573 (LANKHORST INDUTECH BV) 22 January 2003 (2003-01-22)
 - D3: WO 03/008190 A (LANKHORST INDUTECH BV ; LOOS JOACHIM (NL); JACOBS JOHANNES ANTONIUS JO) 30 January 2003 (2003-01-30)
 - D4: EP-A-0 259 940 (NIJVERDAL TEN CATE TEXTIEL) 16 March 1988 (1988-03-16)
 - D5: EP-A-0 417 832 (DESSEAUX H TAPIJTFAB) 20 March 1991 (1991-03-20)
 - D6: PATENT ABSTRACTS OF JAPAN vol. 2000, no. 01, 31 January 2000 (2000-01-31) & JP 11 269811 A (DIATEX CO LTD), 5 October 1999 (1999-10-05)
- 3).
 - a) Having regard to the disclosure in D1, the subject-matter of claim 1 is considered to lack novelty for the reasons set out below. Consequently, the present application does not fulfil the criterion of Art.33(2) PCT.
 - b) It is, firstly, noted that the present IPEA does not regard statements of the intended use of a substance or material as a limiting technical feature of the substance or material per se. Thus, in the present case, the intention to use the yarn of claims 1 to 5 or the method of producing a yarn according to claims 13-15 in the provision of strands for an artificial turf is not limiting. Secondly, the use of "containing" in the definition of the core layer and outer layer (see claims 1 and 13) is considered to be an "open form" equating to "comprising".
 - c) Attention is directed to the claims of D1, particularly claims 1 and 7. Claim 7, which is dependent to claim 1, defines the outer layer of the ABA structured tape or yarn of claim 1 as necessarily containing a high density polyethylene. Claim 1 requires that the central portion always contain a at least one polypropylene. Accordingly, claim 7 of D1, read in its full sense, defines subject-matter where all of the compositional features of preset claim 1 are present without selection of a new compositional combination per se from different lists of separate components. Claim 1 states the drawing ratio to be, "between 6 and 10". Accordingly, there is disclosure of the process-feature of a drawing ratio of 6 as "between" is generally

regarded as being inclusive of the end-values. Thus, the claimed yarn and method of its production can not be recognised as being new on the basis of a drawing ratio of 1:3 to 1:6.

d) As claims 2 to 6 relate to features of a yarn not disclosed in either of claims 1 or 7 of D1, they are considered to be new. However, as they concern features taught in the whole contents of D1, these claims would appear to represent variations obvious to the skilled worker and so lack an inventive step. Similarly, the process claims 13 to 15 represent process features obvious to the skilled worker wishing to produce a yarn according to claim 7 of D1 using the information therein.

e) The subject-matter of claims 7 and 8 appears to relate to features of a yarn neither described nor suggested by D1. Thus, novelty and inventive step is recognised for claims 7 and 8.

f) As the reader receives no indication from D1 regarding an artificial turf, so the subject-matter of claims 9 to 12 is considered to be both new and inventive over D1.

- 4). The documents D2 to D6 appear to represent technical background only and so are considered not to give rise to objection concerning novelty or inventive step (Art.33(2) and (3) PCT).
- 5). The subject-matter of claims 1 to 14 is considered to be capable of industrial application. (Art.33(4) PCT)

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CLAIMS

1. A yarn for strands of an artificial turf ground cover, including a tape filament (4; 54) having a core layer (8; 58) and two outer layers (9; 59) of a different material than the core layer (8; 58) and co-extruded with the core layer (8; 58), each on one of two opposite sides of the core layer (8; 58),
5 wherein
the core layer (8; 58) contains polyester and/or polyolefin material,
the outer layers (9; 59) contain high-density polyethylene, and
the material of the tape filament has been stretched in longitudinal direction at a stretching ratio of 1:3 - 1:6.
- 10 2. A yarn according to claim 1, wherein the core layer (8; 58) contains polyethylene terephthalate or a polyolefin material from a group consisting of polypropylene, a mixture of polypropylene and rubber, a block copolymer of polypropylene and polyethylene and linear low density polypropylene.
3. A yarn according to claim 1 or 2, wherein the aggregated thickness
15 of the outer layers (9; 59) is at most 50% of the thickness of the yarn.
4. A yarn according to any one of the preceding claims, wherein the thickness of each of the outer layers (9; 59) is less than 50 µm and preferably less than 20 µm.
5. A yarn according to any one of the preceding claims, the yarn being
20 of a monofilament tape construction.
6. A yarn according to any one of the preceding claims, wherein the tape filament (54) includes longitudinally extending grooves (60) extending through at least one of the outer layers (59) to the core layer (58).
7. A yarn according to claim 6, wherein the grooves are arranged
25 pairwise diametrically opposite of each other in opposite sides of the tape filament (54).
8. A yarn according to claim 6 or 7, wherein the grooves (60) have bottom portions extending into the core layer (59).
9. An artificial turf ground cover including a substrate sheet (3) and
30 strands (5) fastened to the substrate sheet (3) and projecting upwardly from the substrate sheet (3), wherein
- the strands (5) are formed of a yarn including a tape filament (4; 54) having a core layer (8; 58) and two outer layers (9; 59) of a different material than the core layer (8; 58) and co-extruded with the core layer (8; 58), each on
35 one of two opposite sides of the core layer (8; 58),
- the core layer (8; 58) contains polyester and/or polyolefin material,

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- the outer layers (9; 59) contain high-density polyethylene, and
- the material of the tape filament has been stretched in longitudinal direction.

10. A ground cover according to claim 9, wherein the material of the
5 tape filament has been stretched in longitudinal direction at a stretching ratio of 1:3 - 1:6.

11. A ground cover according to claim 9 or 10, wherein bundles of the strands are cleaved apart portions of at least one tape filament (54) according to any one of the claims 6-8, projecting from a common tape filament portion
10 in an area where the strands are fastened.

12. A playing field including a ground layer (1) and an artificial turf ground cover (2) according to any one of the claims 9-11 covering the ground layer (1).

13. A method for producing a yarn for forming strands of an artificial
15 turf ground cover, including

- extruding a core layer (8; 58) of at least polyester or polyolefin material,
- extruding outer layers (9; 59) containing high density polyethylene,
- bringing the layers (8, 9) in a multilayer configuration with the core
20 layer (8; 58) between two of said outer layers (9; 59)
- stretching the material of the multilayer configuration in longitudinal direction at a stretching ratio of 1:3 - 1:6.

14. A method according to claim 13, wherein the extruding of said core layer (8; 58) and said outer layers (9; 59) and the bringing of said layers
25 (8, 9) in said configuration is carried out simultaneously by co-extruding said layers (8, 9).